

## Fused Coupler, Single Window, Low Loss, C or L Band FFCH Series



### Key Features

- Broad wavelength coverage over multiple bands
- High-power handling
- Wide range of standard parts readily available
- Proven reliability

### Applications

- Passive optical networks
- CATV
- Network expansion
- Fixed attenuation (select configuration option 0)

The single-window fused coupler splits or combines light with high performance over a wide bandwidth. These components are manufactured using a highly automated process to achieve consistent quality and reliability.

These high-performance standard parts are available with a variety of tap ratios, operating wavelengths, and housing and connector options, and can therefore be specified in a wide range of applications, enabling rapid design cycles and new project builds. Reliability is assured through qualification to Telcordia GR-1221.

### Compliance

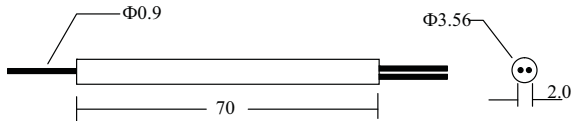
- Telcordia GR-1221

## 2

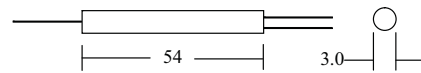
### Dimensions Diagrams

Specifications in mm unless otherwise noted

#### 1x2 Models, L-Package



#### 1x2 Models, S-Package



### Insertion Loss

Coupling Ratio	Grade	Insertion Loss <sup>1,2</sup> (Min./Max.) (dB)	Signal Path			Insertion Loss <sup>1,2</sup> (Min./Max.) (dB)	Tap Path		
			WDL <sup>3</sup> Max. (dB)	PDL <sup>4</sup> Max. (dB)	TDL <sup>5</sup> Max. (dB)		WDL <sup>3</sup> Max. (dB)	PDL <sup>4</sup> Max. (dB)	TDL <sup>5</sup> Max. (dB)
1%	P	NA/0.15	0.03	0.03	0.02	18.4/21.2	0.25	0.20	0.20
1%	A	NA/0.18	0.05	0.05	0.02	17.6/22.4	0.35	0.25	0.20
2%	P	NA/0.18	0.03	0.03	0.02	16.4/17.8	0.22	0.15	0.15
2%	A	NA/0.20	0.05	0.05	0.02	15.8/18.2	0.30	0.20	0.15
3%	P	NA/0.23	0.03	0.03	0.04	14.3/16.0	0.18	0.14	0.15
3%	A	NA/0.28	0.05	0.05	0.04	13.8/17.0	0.26	0.20	0.15
5%	P	NA/0.32	0.03	0.03	0.08	12.2/13.9	0.15	0.12	0.15
5%	A	NA/0.40	0.05	0.05	0.08	11.9/14.4	0.20	0.20	0.15
10%	P	NA/0.60	0.05	0.04	0.08	9.60/10.8	0.13	0.10	0.13
10%	A	NA/0.70	0.06	0.06	0.08	9.20/11.2	0.18	0.15	0.13
20%	P	NA/1.15	0.08	0.05	0.10	6.60/7.60	0.12	0.10	0.10
20%	A	NA/1.25	0.10	0.07	0.10	6.30/8.00	0.15	0.15	0.10
30%	P	NA/1.75	0.10	0.06	0.10	5.00/5.50	0.10	0.10	0.10
30%	A	NA/1.85	0.14	0.08	0.10	4.90/5.60	0.15	0.15	0.10
40%	P	NA/2.50	0.10	0.07	0.10	3.85/4.40	0.10	0.09	0.10
40%	A	NA/2.60	0.15	0.09	0.10	3.70/4.60	0.15	0.11	0.10
50%	P	2.8/3.20	0.10	0.08	0.10	2.80/3.20	0.10	0.08	0.10
50%	A	2.7/3.40	0.15	0.10	0.10	2.70/3.40	0.15	0.10	0.10

1. Tap ratio  $\leq$  five percent, the Insertion Loss including WDL, PDL and TDL; Tap ratio  $>$  five percent, the Insertion Loss including WDL and PDL, not including TDL.
2. In 2x2 couplers with a coupling ratio of 20 percent or lower, insertion loss is not specified for launch through second input port (P4).
3. Change in insertion loss over the operating wavelength range.
4. Change in insertion loss over all input polarization states.
5. Change in insertion loss from  $-5$  to  $75^{\circ}\text{C}$ . Guaranteed by design when tap ratio higher than five percent.

## Specifications

Parameter	1310 band	1480 band	C band	L band
Operating wavelength range <sup>1</sup>	1295 to 1325 nm	1465 to 1495 nm	1528 to 1563 nm	1570 to 1605 nm
Return loss/directivity	Minimum		55 dB	
Pigtail tensile load	Maximum		5 N	
Optical power handling <sup>2</sup>	Maximum		4 W	
Operating temperature range <sup>3</sup>	-40 to 75°C			
Storage temperature range	-40 to 85°C			
Environmental qualification	Telcordia GR-1221			
Package dimensions				
S package (D x L)	3.0 x 54 mm			
L package (D x L)	3.6 x 70 mm			
H package (L x W x H)	85 x 17.8 x 7.5 mm			

- For wavelength within  $\pm 5$  nm of the specified range performance will be maintained for signal path insertion loss, PDL, TDL, directivity and return loss. The only parameters to increase will be tap insertion loss and WDL. Maximum values of increase are:  
Tap ratio = 1%, maximum tap insertion loss and WDL increase = 0.1 dB.  
Tap ratio = 2 to 9%, maximum tap insertion loss and WDL increase = 0.07 dB.  
Tap ratio = 10 to 50%, maximum tap insertion loss and WDL increase = 0.05 dB.
- For 1x2 and 2x2 configurations.
- TDL is specified from -5 to 75°C.

## Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide, or via e-mail at [customer.service@jdsu.com](mailto:customer.service@jdsu.com).

### Sample: FFCHC2H1PB110

FFCH		Coupling Ratio		Configuration		B1		Connectors	
<b>Code</b>	<b>Passband Wavelength</b>	<b>Code</b>	<b>Coupling Ratio</b>	<b>Code</b>	<b>Configuration</b>	<b>Code</b>	<b>Pigtail Length</b>	<b>Code</b>	<b>Connectors</b>
3	1480 nm	1	1%	0	1x1 (attenuator)	0	0.5 m	0	NONE
4	1310 nm	2	2%	1	1x2	1	1 m	1	FC/PC
C	1550 nm	3	3%	2	2x2	2	2 m	2	FC/SPC
L	1590 nm	5	5%			3	3 m	3	FC/APC
		A	10%	<b>Code</b>	<b>Grade</b>	4	4 m	4	SC/SPC
		C	20%	A	Grade A	5	5 m	5	SC/APC
		E	30%	P	Grade P	6	6 m	6	BICONIC
		F	33%			7	7 m	7	D4
		H	40%			8	8 m	8	ST
		K	50%			9	9 m	9	FC/UPC
						A	10 m	A	SC/UPC
		<b>Code</b>	<b>Housing</b>					B	LC
		H	Ø 3.0 mm cable					C	MU
		L	Ø 900 µm fiber						
		S	Ø 250 µm fiber						